

ABSTRACT

A composition for a glass-ceramic material that contains a crystallinity of at least about 30% by weight of forsterite components at a liquidus temperature of about 1525°C or below. The glass-ceramic has a composition, in weight percent on an oxide basis, consisting essentially of about: 40-60% SiO₂; 10-25% Al₂O₃; 18-30% MgO; 3-10% Na₂O; 0-10% K₂O; >5-15% TiO₂. The invention further comprises a method for achieving high crystalline yield at such a low liquidus with increased solubility of high levels of chromium ions. The glass-ceramics can be used in drawing optical fibers and as gain media in amplifier and laser devices for near infrared wavelengths.